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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,437	10/23/2001	Masayuki Kumazawa	M2047-25	2953
7278	7590	08/08/2005	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			ADHAMI, MOHAMMAD SAJID	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/047,437	Applicant(s) KUMAZAWA ET AL.	
	Examiner Mohammad S. Adhami	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 16-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/23/2001</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 16 and 17 are objected to because of the following informalities:

Re claim 16:

The language "switching a priority of a queue having a highest priority prior to being switched to a lowest priority" is confusing. It is suggested that the language be changed to "switching a priority of a queue having a highest priority to a lowest priority," if that is the intent. An additional recommendation for clarity is making "the step of determining a congestion state determines a non-congestion state" a separate step. Appropriate correction is required.

Re claim 17:

Clarification is needed as to whether the "switched" priority refers to the switch of claim 16. If so, then a clear reference to claim 16 should be stated.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 5:

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It is not clear what is meant by "a step proceeds to processing of said congestion state." It is not clear what "step" is being referred to and "processing of said congestion state" is unclear because processing is a dynamic, but a state is static.

Re claim 6:

It is not clear what is meant by "a step proceeds to processing of said non-congestion state when all of said plurality of queues are empty." It is not clear what "step" is being referred to and "processing of said non-congestion state" is unclear because processing is a dynamic, but a state is static.

Re claims 7-9:

"Wherein a priority of a queue having a highest priority prior to being switched among a plurality of queues is switched to a lowest priority," is confusing and renders the claim indefinite.

Furthermore it is not clear what state is being referred to by "this state".

Additionally, it is not clear what is meant by "a step proceeds to processing of said non-congestion state when all of said plurality of queues are empty." It is not clear what "step" is being referred to and "processing of said non-congestion state" is unclear because processing is a dynamic, but a state is static.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman (US 6,628,609) in view of Appanna (US 6,678,244).

Re claims 1 and 2:

Chapman discloses a "packet transmitting means" for extracting and transmitting a packet (Col.3 lines 6-11 "capable of releasing data units from said switch" and Col. 4 lines 6-9 "requests release of the data packet"), a "receiving means" (Col. 3 lines 4-5 "each input port capable of receiving data units"), a plurality of queues (Col. 3 lines 51-52 "the creation of one or more queues"), a "classifying device" (Col. 10 lines 29-38 "the local controllers are responsible for the data handling and queuing...is responsible for supporting priority").

Chapman does not disclose omitting a classification made by the classifying device in a non-congestion state.

Appanna discloses omitting a classification in a non-congestion state (Col. 6 lines 4-11 "if the flag indicates that the internal data path is not congested, the Q-node allows a packet stream to pass through").

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chapman to skip classification in a non-congestion state as taught by Appanna in order to reduce the packet processing time.

Re claim 3:

Chapman discloses a means for referring to priority and transmitting a packet from a queue having a higher priority (Col. 5 lines 6-9 "The switch fabric controller recognizes the low priority status and will allow the release of a low priority data packet only when there are no other high priority data packets to send")

Re claim 4:

Chapman discloses transmitting a packet directly to a queue having highest priority in a non-congestion state (while the average bandwidth usage is below or equal to the bandwidth fraction...during which time traffic is release with high priority")

3. Claims 10-12,14,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson (US 6,577,596) in view of Appanna.

Re claim 10:

Olsson discloses "establishing at least first and second queues" (Col. 4-5 lines 67,1 "packets may be queued in a first and a second queue), classifying a priority of an arrived packet when a congestion state exists (Col. 6 lines 60-62 "During periods of congestion it is often the case that packets awaiting transfer

must be scheduled or queued”), and transferring a packet to the first or second queue based on priority (Col. 5 lines 1-3 “scheduling...according to...classifications, the first queue having priority over the second queue”).

Olsson does not disclose “determining a congestion state” or omitting the step of classification when congestion does not exist.

Appanna discloses, “determining a congestion state” (Col. 2 lines 44-47 “The method generally includes monitoring congestion...and setting a bit within a congestion notification flag...when the node is congested”) and omitting a classification in a non-congestion state (Col. 6 lines 4-11 “if the flag indicates that the internal data path is not congested, the Q-node allows a packet stream to pass through”).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olsson to include determining a congestion state and omitting classification in a non-congestion state as taught by Appanna in order to reduce the packet processing time.

Re claim 11:

Olsson discloses transferring packets directly into a first or second queue when congestion does not exist (Col.4-5 lines 67,1 “packets may be queued in a first and a second queue”)

Re claim 12:

Olsson discloses referring to the priority of the first and second queue to determining the higher priority queue, and then transmitting packets from the

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higher priority queue (Col. 7 lines 30-32, 38-41 "high priority packet...may be placed in high priority queue" and "Outbound packets...are sent...according to priority with high priority outbound packet...being sent first").

Re claim 14:

Olsson in view of Appanna meet all the limitation of the parent claim as stated above.

Olsson in view of Appanna does not disclose determining a congestion state based on queue length.

Appanna discloses determining a congestion state based on queue length (Col. 1 lines 60-63 "various measurements may be used to monitor network congestion such as...average queue length")

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olsson to determine a congestion state based on queue length as taught by Appanna in order to prevent overflow and loss of packets.

Re claim 15:

As discussed above, Olsson in view of Appanna meets all the limitations of the parent claims.

Olsson in view of Appanna does not disclose determining a non-congestion state when queues are empty.

As is well known in the art, empty queues are in a non-congestion state.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olsson in view of Appanna to define a non-congestion

state as a state where the queues are empty because by definition a non-congestion state is when the queue is not full, thus having empty queues would be determine a non-congestion state.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Appanna as applied to claim 11 above, and further in view of Chapman.

As discussed above, Olsson in view of Appanna meets all the limitations of the parent claim.

Olsson in view of Appanna does not disclose directly transferring a received packet to the highest priority queue in a non-congestion state.

Chapman discloses transmitting a packet directly to a queue having highest priority in a non-congestion state (while the average bandwidth usage is below or equal to the bandwidth fraction...during which time traffic is release with high priority”).

It would have been obvious to one of ordinary skill in the art at the time of the invention modify Olsson in view of Appanna to include directly transmitting a packet to the highest priority queue in a non-congestion state as taught by Chapman, in order to reduce the delay in transmitting a packet.

Allowable Subject Matter

5. Claims 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad S. Adhami whose telephone number is (571)272-8615. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MSA 7/25/2005


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